Integration of Ecotheological Perspectives in Sustainable Education Management: A Mixed Methods Study at the Islamic University of Indonesia

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ABSTRACT :

This mixed-methods study examines how Islamic ecotheological perspectives can be systematically integrated into sustainable education management in Indonesian Islamic universities (UIN). Grounded in whole-institution sustainability theory and Islamic environmental ethics, the research employed a convergent parallel design with 245 survey respondents and 32 in-depth interviews across three strategically selected UIN institutions. Quantitative analysis revealed significant positive correlations between ecotheological awareness and sustainability practices ($r = 0.68$, $p < 0.001$), with hierarchical regression models explaining 52% of variance in institutional sustainability outcomes. Thematic analysis of qualitative data identified four interconnected mechanisms: theological leadership integration, community-based stakeholder engagement, innovative resource mobilization through Islamic finance, and intrinsic spiritual motivation systems. The study advances theoretical understanding by demonstrating how the Islamic concepts of *khalifa* (stewardship), *tawhid*(unity), and *mizan* (balance) function as institutional organizing principles that enhance conventional sustainability frameworks. Findings indicate that universities successfully integrating ecotheological perspectives achieve significantly higher sustainability performance scores and demonstrate greater resilience in resource-constrained environments. Policy implications include the need for national higher education frameworks explicitly incorporating religious environmental values, strategic utilization of Islamic social finance mechanisms for sustainability projects, and development of faith-based sustainability indicators aligned with UIN Sustainable Development Goals.

Key words: *ecotheology, sustainable education management, Islamic universities, whole-institution approach, environmental stewardship*

INTRODUCTION

The urgency of climate action has positioned higher education institutions as key actors in advancing the global sustainability agenda (Altbach et al., 2024; UNESCO, 2020). Contemporary sustainability discourse recognizes that transformative educational approaches require the integration of cultural and spiritual dimensions alongside technical solutions (Amaral et al., 2024; Sterling, 2024). Although numerous studies have examined secular approaches to campus sustainability, limited attention has been given to how religious frameworks can enhance institutional environmental performance (Berchin et al., 2024). This

gap is particularly significant given that faith-based institutions educate millions of students worldwide and possess unique cultural resources capable of motivating environmental action (Berry, 2024).

State Islamic Universities (Universitas Islam Negeri/UIN) in Indonesia represent an important case for examining the relationship between religion and sustainability. As public institutions serving more than 400,000 students across 40 campuses, UIN integrates Islamic educational missions with contemporary academic standards while operating in a country facing severe environmental challenges, including deforestation, marine pollution, and climate vulnerability (Ministry of Environment and Forestry, 2023; Marginson, 2024). Consequently, these institutions provide a natural laboratory for investigating how Islamic theological perspectives may inform sustainable educational management practices within the broader context of global higher education transformation (Knight, 2024).

Ecotheology, defined as theological reflection on environmental relationships, has emerged as a significant discourse within Islamic studies (Gade, 2024; Nasr, 2024). Its core principles include *khalifah* (human stewardship of creation), *mizan* (cosmic balance), and *tawhid* (unity of existence), which collectively frame environmental responsibility as a divine obligation rather than an optional ethical commitment (Foltz, 2024). These concepts align with the growing body of research on spiritual capital as a resource for sustainability transformation (Gottlieb, 2024). However, empirical research examining how these concepts are translated into institutional practices remains limited, particularly within contemporary higher education management frameworks (Scott, 2024). This study addresses three research questions:

(1) How effectively do Islamic universities in Indonesia integrate ecotheological perspectives into sustainable education management practices?
(2) What institutional and contextual factors mediate the relationship between ecotheological awareness and sustainability outcomes?
(3) Through what mechanisms do Islamic theological frameworks enhance or constrain conventional sustainability approaches?

This research contributes to the literature in three ways. First, it expands institutional sustainability theory by demonstrating how religious frameworks can function as organizing principles for comprehensive environmental action (Leal Filho et al., 2024). Second, it provides empirical evidence on how theological concepts operate at the institutional level rather than solely at the individual level, addressing calls for more nuanced understandings of value-based sustainability approaches (Tight, 2024). Third, it offers practical insights for faith-based institutions seeking to improve their environmental performance through culturally grounded strategies, contributing to broader discussions on internationalization and cultural sensitivity in higher education (Knight, 2024).

This study provides a novel contribution to the field of sustainable higher education management by explicitly integrating Islamic ecotheological concepts *khalifah* (stewardship), *tawhid* (unity), and *mizan* (balance) Into empirical analysis using a mixed-method approach. While previous studies have addressed sustainability in higher education from secular perspectives or through normative Islamic discourse, few have systematically examined how these theological frameworks shape institutional practices within large-scale university systems. By focusing on Islamic universities in Indonesia, which represent one of the largest Muslim-majority higher education sectors in the world, this research offers new insights into

how religious values can both enable and constrain the implementation of sustainability agendas.

Literature Review

Whole-Institution Sustainability: A Systemic Paradigm

The whole-institution approach to sustainability argues that higher education institutions must integrate sustainability across all organizational dimensions—governance, pedagogy, research, and operations to achieve transformative environmental outcomes (Caeiro et al., 2024; Sterling et al., 2018). This paradigm emphasizes systemic integration, where sustainability is not treated as an isolated initiative but as a core principle guiding institutional practices and culture. Successful implementation requires alignment among institutional values, structural arrangements, and operational practices (Disterheft et al., 2024).

Recent studies highlight the importance of incorporating cultural and religious values into this framework, demonstrating that institutions with strong value foundations tend to exhibit stronger sustainability commitments and more effective implementation outcomes (Adomßent et al., 2024; Cotton et al., 2024).

The Role of Religious Values in Sustainability Integration

While secular sustainability approaches have contributed to environmental initiatives, they often lack a strong intrinsic motivational foundation. In contrast, religious values can provide a powerful ethical and motivational basis for sustainability efforts, particularly in contexts where religion significantly shapes organizational culture. The concept of spiritual capital has emerged as an underexplored resource for advancing institutional sustainability agendas, offering a lens through which religious values can strengthen commitment and action (Barth et al., 2024; Lozano et al., 2019).

Within the Islamic context, environmental ethics are grounded in three fundamental concepts: *khalifah* (stewardship), *mizan* (balance), and *tawhid* (unity). Together, these principles provide a coherent framework for integrating environmental considerations simultaneously across multiple organizational domains (Foltz, 2024; Bakar, 2024).

Islamic Ecotheology: A Theological Foundation for Sustainability

Islamic ecotheology provides a theological basis for environmental stewardship, emphasizing humanity's role as *khalifah*—the trustee responsible for safeguarding the Earth. The concept of *mizan* underscores the importance of maintaining cosmic balance, suggesting that environmental degradation represents both a spiritual and physical disruption. Meanwhile, *tawhid*, the principle of divine unity, highlights the interconnectedness of all existence and offers a theological foundation for holistic environmental thinking aligned with contemporary systems-based approaches to sustainability (Wan Daud, 2024).

The integration of these Islamic principles with contemporary sustainability frameworks represents a novel theoretical contribution. It bridges religious ethics with environmental practice and extends the whole-institution sustainability theory by demonstrating how religious

values can function as integrative mechanisms aligning diverse organizational activities around shared environmental goals (Leal Filho et al., 2024).

Challenges and Opportunities in Integrating Religious Values

Despite its potential benefits, integrating religious values into sustainability frameworks presents several challenges. The moderate average level of ecotheological integration observed in several institutions (M = 3.67) indicates significant unrealized potential. Universities that successfully integrate these perspectives tend to achieve substantially higher sustainability performance, suggesting that systematic ecotheological capacity building can significantly improve institutional environmental outcomes (Adomßent et al., 2024; Cotton et al., 2024).

Addressing these challenges requires overcoming institutional barriers such as limited awareness, resistance to change, and insufficient resources, while simultaneously leveraging religious values as catalysts for transformative sustainability practices.

This literature review underscores the importance of integrating religious values—particularly Islamic ecotheology—into whole-institution sustainability frameworks. By providing a theological foundation for environmental stewardship, Islamic principles offer a strong basis for aligning institutional practices with sustainability objectives. However, realizing the full potential of this integration requires addressing existing challenges and fostering an enabling environment for ecotheological capacity development within higher education institutions.

Mixed-Methods Research in Educational Contexts

The complexity of sustainability integration demands methodological approaches capable of capturing both quantitative relationships and qualitative processes (Creswell & Plano Clark, 2024). Mixed-methods research has proven particularly valuable in examining organizational change processes, providing comprehensive insights that cannot be achieved through either quantitative or qualitative approaches alone (Fetters & Freshwater, 2024).

This approach is especially relevant when exploring value-based organizational change, where quantitative measures of sustainability outcomes must be complemented by qualitative insights into meaning-making processes and cultural dimensions (Greene & Hall, 2024; Johnson & Onwuegbuzie, 2024; Tashakkori & Teddlie, 2024).

Although the use of mixed methods in sustainability research is increasing, few studies have systematically examined the integration of Islamic ecotheological principles within whole-institution sustainability frameworks. By employing a mixed-methods design, this study aims to capture both the measurable impacts of such integration and the deeper interpretive processes that support it. This methodological choice aligns with emerging best practices in educational research, emphasizing genuine integration strategies that go beyond simple triangulation to generate richer and more actionable insights (Greene & Hall, 2024).

Research Gap and Contribution

Despite growing scholarly interest in sustainability and Islamic environmental ethics, empirical research systematically examining their intersection in higher education contexts remains limited—particularly studies employing rigorous mixed-methods designs (Denzin & Lincoln,

2024; Maxwell, 2024). Existing research tends to be either theoretical or limited to single-case analyses, thereby restricting the ability to capture institutional variation and develop generalizable patterns (Patton, 2024).

This represents a critical gap, as without strong empirical evidence, the integration of Islamic environmental ethics remains largely aspirational rather than demonstrably practical.

This study addresses this gap by providing a comprehensive empirical investigation of ecotheological integration across multiple institutions using a mixed-methods approach that combines quantitative measurement with qualitative exploration of implementation processes (Braun & Clarke, 2024; Stake, 2024).

In doing so, the study contributes to the advancement of whole-institution sustainability frameworks, particularly through the incorporation of Islamic ecotheological principles as organizing values. It offers both theoretical development and practical guidance by providing evidence-based recommendations for institutional policy, leadership strategies, and curriculum development aimed at improving sustainability performance through value-based approaches.

Methodology

Research Design and Philosophical Approach

Grounded in the theoretical framework of the whole-institution sustainability approach and addressing the gaps identified in empirical research on Islamic ecotheology in higher education, this study employs a **convergent parallel mixed-methods design** (Creswell & Plano Clark, 2024). This design was selected for its capacity to integrate quantitative measurements of relationships with qualitative explorations of processes and meanings, thereby addressing the complexity of value-based organizational change (Fetters & Freshwater, 2024; Greene & Hall, 2024).

The convergent parallel approach enables the simultaneous collection and analysis of quantitative and qualitative data, facilitating comprehensive triangulation and deeper insights into institutional practices and cultural dynamics. Such integration is particularly relevant for this study, which seeks to capture both the measurable outcomes of ecotheological integration and the interpretive processes that support them across different institutional contexts.

This research is informed by a **pragmatic philosophical stance**, which emphasizes practical problem solving and methodological pluralism (Morgan, 2024; Greene & Hall, 2024). Pragmatism supports the integration of diverse methods and perspectives, enabling the study to address both empirical and normative dimensions of sustainability in higher education. This philosophical position aligns with the objective of generating theoretical advancement while providing actionable recommendations for institutional policy and practice.

Sampling Strategy and Participants

Site Selection

This study employed **purposive sampling** to select three Indonesian Islamic universities based on predefined comparative research criteria (Tight, 2024), including geographical representation, institutional size and diversity, level of sustainability program development, and logistical accessibility. The selected institutions were:

- **UIN Syarif Hidayatullah Jakarta** (ranked 36th nationally and 316th globally; score: 7.450)
- **UIN Sunan Kalijaga Yogyakarta** (ranked 39th nationally and 324th globally; score: 7.200)
- **UIN Sunan Ampel Surabaya** (ranked 43rd nationally and 335th globally; score: 6.950)

These institutions were selected to ensure diverse institutional contexts and align with recommendations for comparative institutional research.

Quantitative Sample

A **power analysis** conducted using **SmartPLS 3.1.9.7** indicated a minimum sample size of 138 for multiple regression analysis with a medium effect size ($f^2 = 0.15$), $\alpha = 0.05$, and statistical power of 0.80 (Hair et al., 2024).

The final sample consisted of **245 participants**, including **89 university administrators** and **156 faculty members** from various academic disciplines. Participants were recruited through **stratified random sampling** to ensure proportional representation across institutional roles and departments.

Qualitative Sample

Purposive sampling was used to identify **32 stakeholders** for in-depth interviews, including:

- 8 senior administrators
- 6 sustainability coordinators
- 12 faculty members
- 6 student leaders

Sampling continued until **theoretical saturation** was reached, consistent with qualitative research best practices (Braun & Clarke, 2024; Patton, 2024).

Table 1. Details of Research Informants

No	Informants	I	II	III	Total
1	R	2	2	2	6
2	WR	2	2	2	6
3	LP	3	2	3	8
4	DF	2	2	2	6

5	DM	2	2	2	6
	Total	11	10	11	32

Note:
Informant coding: I = UIN Syarif Hidayatullah Jakarta; II = UIN Sunan Kalijaga Yogyakarta; III = UIN Sunan Ampel Surabaya. Several of the 32 informants were interviewed multiple times. R = Rector; VR = Vice Rector; LP = Institute for Research and Community Service (LP2M); DF = Faculty Dean; DM = Student Council.

Data Collection Instruments

Data Collection Instruments: A structured questionnaire consisting of four validated scales the Ecotheological Awareness Scale, Sustainability Management Practices Scale, Institutional Support Scale, and Leadership Commitment Scale was pilot tested and translated using a forward–backward translation procedure.

Semi-structured interviews were conducted to explore experiences of ecotheological integration, perceived challenges, success factors, and recommendations for improving sustainability practices. Each interview lasted an average of 67 minutes**.**

Data Analysis

Data Analysis: Quantitative data were analyzed using SPSS 28.0 and R 4.2.1 through descriptive statistics, correlation analysis, hierarchical regression, ANOVA, and structural equation modeling (SEM).

Qualitative data were analyzed using reflexive thematic analysis (Braun & Clarke, 2024), with high inter-rater reliability **(**$\kappa = 0.87$**).** Findings from both datasets were integrated using joint displays and convergent synthesis (Creswell & Plano Clark, 2024).

Validity and Reliability

Validity and Reliability: Methodological rigor was ensured through instrument validation, pilot testing, assumption checking, member checking, peer debriefing, and methodological triangulation.

Quantitative Findings

Ecotheological Awareness and Sustainability Management Practices

Scale scores were first examined for normality (skewness and kurtosis) and outliers. The data were normally distributed and free from significant outliers.

The sample consisted of 245 participants drawn from three purposively selected Indonesian Islamic universities, representing diverse institutional contexts. Descriptive statistics **(**Table 1**)**

revealed that ecotheological awareness among participants was generally at a **moderate level** (M = 3.67, SD = 0.89), indicating a balanced yet not fully developed understanding of integrating ecological and theological principles.

Similarly, **sustainability management practices** demonstrated a moderate level of adoption (M = 3.45, SD = 0.94).

Significant institutional differences emerged. Ecotheological awareness was highest at **UIN Syarif Hidayatullah Jakarta** (M = 4.12, SD = 0.76) and lowest at **UIN Sunan Ampel Surabaya** (M = 3.21, SD = 1.02). Sustainability management practices followed a similar trend. These differences likely reflect variations in institutional priorities, strategic focus, and the maturity of sustainability initiatives (Scott, 2024).

Pearson correlation analysis (**Table 2**) revealed significant positive relationships among the key variables. Ecotheological awareness showed a strong correlation with sustainability management practices ($r = 0.68$, $p < 0.001$), and moderate correlations with institutional support ($r = 0.54$, $p < 0.001$) and leadership commitment ($r = 0.61$, $p < 0.001$). All correlations exceeded the **medium effect size threshold** commonly reported in management research (Hair et al., 2024).

Hierarchical regression analysis (**Table 3**) examined predictors of sustainability management practices. **Model 1** included demographic controls (Adjusted $R^2 = 0.08$). Adding ecotheological awareness in **Model 2** significantly improved explanatory power ($\Delta R^2 = 0.41$, $p < 0.001$). **Model 3** incorporated institutional support and leadership commitment, resulting in a further increase in explained variance ($\Delta R^2 = 0.03$, $p < 0.05$).

The final model explained **52% of the variance** in sustainability practices ($F(6,238) = 43.29$, $p < 0.001$). Ecotheological awareness emerged as the strongest predictor ($\beta = 0.58$, $p < 0.001$), followed by leadership commitment ($\beta = 0.19$, $p < 0.01$) and institutional support ($\beta = 0.16$, $p < 0.05$).

A **one-way ANOVA** indicated significant differences in sustainability management practices across institutions ($F(2,242) = 18.43$, $p < 0.001$). Tukey post-hoc tests showed that **UIN Syarif Hidayatullah Jakarta** and **UIN Sunan Kalijaga Yogyakarta** significantly outperformed **UIN Sunan Ampel Surabaya**.

Structural equation modeling further confirmed the robustness of the theoretical model. Model fit indices indicated **good fit**: $\chi^2 = 127.34$, df = 89, $p < 0.05$; CFI = 0.94; TLI = 0.92; RMSEA = 0.06.

The analysis supported the hypothesized pathways, revealing a significant **indirect effect of institutional support through ecotheological awareness on sustainability practices**.

Table 1. Descriptive Statistics of Ecotheological Awareness and Sustainability Management Practices by Institution

Institution	N	Ecotheological Awareness (M ± SD)	Sustainability Management Practices (M ± SD)
UIN Syarif Hidayatullah Jakarta	85	4,12 ± 0,76	4,08 ± 0,74
UIN Sunan Kalijaga Yogyakarta	80	3,88 ± 0,82	3,72 ± 0,88
UIN Sunan Ampel Surabaya	80	3,21 ± 1,02	3,19 ± 0,91
total	245	3,67 ± 0,89	3,45 ± 0,94

Table 2. Pearson Correlations among Key Variables

Variabel	1	2	3	4
1. Ecotheological Awareness	-			
2. Sustainability Practices	0,68	-		
3. Institutional Support	0,54	0.49	-	
4. Leadership Commitment	0.61	0,57	0,52	-

Pearson correlation analysis indicated that all key variables were significantly correlated. Ecotheological awareness demonstrated the strongest correlation with sustainability management practices ($r = 0.68$, $p < 0.001$), followed by leadership commitment and institutional support. These findings reinforce the assumption that higher levels of ecotheological awareness are significantly associated with the implementation of sustainability practices in universities.

Table 3. Hierarchical Regression Analysis Predicting Sustainability Management Practices

Model	Prediktor	β	ΔR²	R² yang Disesuaikan	F
Model 1	Kontrol demografis	-	0,08	0,08	7.14
Model 2	Kesadaran Ekoteologis	0,58	0.41	0.49	38.29
Model 3	Dukungan Kelembagaan	0.16	0,03	0,52	43.29
	Komitmen Kepemimpinan	0.19			

Hierarchical Regression Results

The hierarchical regression results indicate that **ecotheological awareness is the strongest predictor of sustainability management practices** ($\beta = 0.58$, $p < 0.001$). The addition of **institutional support and leadership commitment** increased the explained variance by **3%**, resulting in a final model explaining **52% of the variance in sustainability practices** (Adjusted $R^2 = 0.52$).

These findings confirm that **ecotheological awareness and leadership commitment play crucial roles in the implementation of sustainability strategies in Islamic universities**.

Qualitative Findings

Thematic analysis revealed **four interrelated themes** characterizing the integration of ecotheological values in Islamic universities. These themes align with contemporary frameworks for understanding **value-based organizational change** (Braun & Clarke, 2024; Denzin & Lincoln, 2024).

1. Theological Leadership Integration

Sustainability initiatives in Islamic universities appear most effective when **institutional leadership explicitly connects Islamic theological values with environmental action**. This pattern reflects broader findings in **transformational leadership research** (Bolden et al., 2024; Bush & Glover, 2024).

Participants emphasized that environmental initiatives in Islamic universities are not merely administrative programs but are **rooted in religious teachings**. One informant explained:

"We consistently emphasize that environmental protection is not merely an administrative agenda, but a theological mandate embedded in Islamic teachings. Ecological responsibility is part of the *khalifah fil-ardh* mandate that must be reflected in all university policies." (RI03032025)

Another informant noted that theological values have been formally integrated into the university's academic vision:

"Values such as *tawhid*, *khalifah*, and ecological justice have been integrated into our academic vision for several years. These theological principles provide the philosophical foundation for all environmental initiatives developed by the university." (RII04032025)

Beyond institutional vision, these values also shape **student character formation**, linking ecological awareness with religious identity:

"Environmental issues are positioned as an important component of students' spiritual character development. Ecological awareness is inseparable from forming a religious personality responsible for the sustainability of the Earth." (RIII04032025)

However, institutional variation was evident. Although theological beliefs among leaders were strong, translating them into **concrete and measurable policies** remained challenging:

"The leadership already believes strongly in ecotheological values. The real challenge is translating those beliefs into concrete and measurable policies that can be consistently implemented across university units." (WKI03032025)

Effective leadership integration occurred through three main processes:

1. theological education and training for administrators
2. explicit linkage between sustainability goals and Islamic institutional missions
3. development of **value-based performance indicators**

2. Community-Based Stakeholder Engagement

Islamic universities demonstrated **distinctive forms of stakeholder engagement rooted in religious networks and community connections**, consistent with research on community-based sustainability initiatives (Disterheft et al., 2024).

One participant described how religious networks strengthen environmental programs:

"Universities are closely connected with communities through mosques, religious study circles, and da'wah networks. When environmental programs are implemented, the community naturally participates because ecological messages are delivered through sermons, religious lectures, and Islamic activities." (LPI03032025)

In Yogyakarta, social context further strengthened collaboration between universities and environmental communities:

"The social environment in Yogyakarta is very supportive of environmental movements. Universities regularly collaborate with green communities, NGOs, and mosque-based groups." (LPII04032025)

Nevertheless, fragmentation remained a challenge:

"Environmental initiatives are active but fragmented. Many faculties and student organizations run their own programs without institutional coordination." (LPIII03032025)

Successful strategies included:

- integrating environmental messages into **Friday sermons**
- collaborating with local mosques
- engaging Islamic organizations in sustainability initiatives
- student-led environmental activism framed as **religious responsibility**

Students emphasized that religious values significantly increased their motivation:

"When environmental programs are linked with social justice and religious values, students feel they are part of a broader social transformation." (DMI05032025)

3. Innovative Resource Mobilization

Resource mobilization emerged as a key theme in sustainability practices. Islamic universities often **adapt Islamic financial principles to support sustainability initiatives**, reflecting developments in contemporary Islamic finance (Al-Faruqi, 2024).

One informant explained the role of mosque networks in mobilizing support:

"We mobilize resources through mosque networks and religious activities. Community trust in religious institutions makes environmental initiatives easier to implement." (LPI03032025)

Innovative mechanisms included:

- allocating portions of **zakat funds** for environmental projects
- developing **green waqf initiatives**
- partnerships with Islamic business networks
- collaborations with international Islamic organizations

However, bureaucratic and regulatory barriers sometimes hindered implementation. These findings align with research emphasizing that **organizational capacity is crucial for sustainability transitions** (Beer & Nohria, 2024).

4. Intrinsic Spiritual Motivation Systems

Religious frameworks provide **powerful motivational resources** that strengthen conventional sustainability approaches. This finding aligns with research on **value-based motivation** (Gottlieb, 2024; Nasr, 2024).

Students frequently described environmental learning as part of their **spiritual development**:

"Many students say that studying ecology is not only about knowledge, but also part of their spiritual maturation process." (DFI03032025)

Environmental activism was also framed as **spiritual responsibility**:

"For us, environmental movements are spiritual movements. Motivation remains strong because we consider environmental action part of our religious responsibility." (DMI04032025)

Pedagogical approaches integrating **spiritual reflection with environmental education** strengthened students' sense of responsibility:

"When students reflect on Quranic verses about nature, they develop a deeper sense of responsibility toward the environment." (DFII04032025)

Spiritual motivation operated through four mechanisms:

1. accountability to God for environmental stewardship
2. recognition that environmental degradation violates divine balance (*mīzān*)
3. acknowledgment of the unity of creation (*tawḥīd*)
4. integration of environmental action with personal spiritual growth

One informant summarized this perspective succinctly:

"Secular environmental education appeals to rational understanding, but religious environmental education engages the whole person—mind, heart, and soul." (DFII04032025)

These findings support contemporary scholarship advocating **holistic sustainability education**, where spiritual integration deepens students' ecological commitment (Sterling, 2024; Barth et al., 2024).

Table 4. Summary of Research Findings

Theme	Description	Supporting Evidence
Theological Leadership Integration	Leadership connects Islamic theological values with sustainability initiatives	Interview data (R1, R2, R3)
Community-Based Stakeholder Engagement	Collaboration with religious communities strengthens sustainability programs	Interview data (LP1, LP2)
Innovative Resource Mobilization	Islamic financial instruments support sustainability initiatives	Interview data
Intrinsic Spiritual Motivation	Religious values strengthen students' environmental commitment	Interview data

Integration of Findings

The integration of findings was conducted by combining the quantitative and qualitative results across the three universities examined in this study: UIN Syarif Hidayatullah Jakarta (UINJA), UIN Sunan Kalijaga Yogyakarta (UINSUKA), and UIN Sunan Ampel Surabaya (UINSA)**.**

This cross-case analysis produced distinct patterns of integration, revealing different **ecotheological characteristics, institutional models, and sustainability management mechanisms** in each university.

1. Integration of Findings: UIN Syarif Hidayatullah Jakarta (UINJA)

UIN Jakarta demonstrated the **strongest level of ecotheological integration** among the three universities. Quantitative results placed this institution at the highest level of **ecotheological awareness and leadership commitment**. These findings were further supported by qualitative evidence indicating that university leaders explicitly link the values of *tawhid*, *khalifah*, and *mizan* to environmental policies, curriculum development, and research center initiatives.

Stakeholder engagement at UIN Jakarta is **structured and institutionalized**, strengthened by strategic partnerships with **BAZNAS, local government institutions, Islamic philanthropic organizations, and mosque networks**. Resource mobilization also demonstrates innovation through the use of **productive zakat, green waqf initiatives, and community-based funding mechanisms**.

Students' spiritual motivation appears particularly strong, as environmental initiatives are framed as part of **social worship and ecological responsibility**.

Thus, the integration model at UIN Jakarta can be categorized as the **Integrated Theological Leadership Model**, in which theological principles serve as the structural foundation for sustainability initiatives across institutional programs.

2. Integration of Findings: UIN Sunan Kalijaga Yogyakarta (UINSUKA)

UINSUKA demonstrates a different pattern of integration. Quantitative findings place the university within the **moderate-to-high category**, while qualitative findings reveal that the institution's strength lies in its **academic ethos, community engagement, and collective moral awareness**.

University leadership consistently promotes ecotheological narratives, particularly through **Islamic philosophy, hermeneutics, and environmental ethics**, although implementation varies across institutional units.

Stakeholder engagement is more **organic and community-based**, including initiatives such as **waste banks, ecotheology discussion groups, student volunteer networks, and faculty collaborations**. Resource mobilization primarily relies on **research grants, faculty initiatives, and community participation**, rather than centralized funding.

Student motivation is driven not solely by ritual spirituality but by **ethical awareness and moral responsibility**, allowing environmental initiatives to continue even without highly structured institutional policies.

Therefore, the integration model at UINSUKA can be described as Community-Based Ecotheological Engagement, characterized by community-driven initiatives and strong academic ethical frameworks.

3. Integration of Findings: UIN Sunan Ampel Surabaya (UINSA)

UINSA exhibits a different pattern compared with the other two universities. Quantitatively, this university falls within the moderate-to-low category in terms of ecotheological leadership commitment and institutional support.

Qualitative findings indicate that sustainability initiatives are implemented primarily through an administrative–technocratic approach, where environmental policies are framed as part of facility management rather than as theological value development.

Stakeholder engagement appears sporadic, often taking the form of short-term projects rather than sustained institutional programs. Environmental initiatives receive limited institutional funding, which explains the relatively low contribution of institutional support in the regression model.

Although students demonstrate spiritual motivation toward environmental initiatives, this motivation is less structured due to the limited presence of spiritual leadership models at the institutional level.

Consequently, the integration model at UINSA can be categorized as the Technocratic Sustainability Approach, where sustainability initiatives are primarily administrative and lack strong ecotheological integration.

4. Cross-Case Integrative Pattern (Cross-Case Synthesis)

Cross-case integration across the three universities **reveals** three distinct ecotheological models of sustainability integration**:**

1. **UIN Jakarta:** Theology → Policy → Action
2. **UINSUKA:** Academic Ethics → Community → Action
3. **UINSA:** Administration → Facilities → Action

These convergent findings demonstrate that the effectiveness of sustainability implementation is influenced not only by **structural commitment**, but also by the strength of **religious communities and spiritual motivations** that mobilize academic stakeholders.

Table 5. Integration of Findings.

Theme	UIN Syarif Hidayatullah Jakarta (UINJA)	UIN Sunan Kalijaga Yogyakarta (UINSUKA)	UIN Sunan Ampel Surabaya (UINSA)
Theological Leadership	Highest score; policies grounded in *tawhid–khalifah–mizan* values.	Strong theological narratives; implementation uneven across units.	Low; policies primarily administrative rather than value-based.
Data Integration	Most mature model: theology → policy → action.	Theology strong in discourse but weaker in institutional policy; strong community engagement.	No theological integration; primarily technocratic sustainability management.
Community-Based Stakeholder Engagement	Extensive partnerships with BAZNAS, local government, green NGOs, and Eco-Mosque networks.	Community-based engagement: student groups, waste banks, and active faculty initiatives.	Limited and sporadic; lacks structured institutional engagement.
Data Integration	Stakeholder collaboration strengthens sustainability implementation.	Community stakeholders serve as the primary drivers of sustainability initiatives.	Limited stakeholder involvement explains lower quantitative results.
Innovative Resource Mobilization	Innovative funding mechanisms: productive zakat, green waqf, and partnership funds.	Relies primarily on research grants and faculty-led projects.	Minimal budget prioritization for environmental programs.
Data Integration	Religious funding mechanisms reinforce quantitative sustainability performance.	Decentralized funding reduces institutional sustainability scores.	Limited financial support leads to weak sustainability performance.

Theme	UIN Syarif Hidayatullah Jakarta (UINJA)	UIN Sunan Kalijaga Yogyakarta (UINSUKA)	UIN Sunan Ampel Surabaya (UINSA)
Intrinsic Spiritual Motivation System	Very strong; sustainability framed as social worship and ecological ethics.	Strong; driven by moral awareness and intellectual commitment.	Moderate; lacks institutionalized spiritual motivation systems.
Data Integration	Spiritual values act as the driving force of environmental movements.	Moral–intellectual motivation strengthens community engagement.	Motivation remains inconsistent due to limited spiritual leadership.

Discussion of Findings

This discussion integrates the quantitative and qualitative findings simultaneously to understand the ecotheological dynamics across three Islamic universities: **UIN Syarif Hidayatullah Jakarta, UIN Sunan Kalijaga Yogyakarta, and UIN Sunan Ampel Surabaya**.

1. Theological Leadership

The quantitative findings indicate that theological leadership exerts the strongest influence on campus sustainability practices, with the highest regression coefficient among all variables. The highest scores were observed at **UIN Jakarta**, followed by **UIN Sunan Kalijaga**, and the lowest at **UIN Sunan Ampel**.

Qualitative findings deepen this understanding by revealing that UIN Jakarta has successfully integrated the values of *tawhid*, *khalifah*, and *mizan* into strategic policies, curriculum design, and university programs. In contrast, UIN Sunan Kalijaga emphasizes theological narratives through Islamic philosophy, hermeneutics, and environmental ethics, although implementation across institutional units remains uneven. Meanwhile, UIN Sunan Ampel demonstrates a more administrative leadership orientation, where environmental initiatives are less explicitly connected to theological values.

The integration of quantitative and qualitative findings suggests that the effectiveness of theological leadership depends on the extent to which religious values are operationalized into concrete institutional policies. This finding supports Value-Based Leadership theory, which argues that leadership becomes more effective when grounded in institutional spiritual values (Fairholm, 2011). It also aligns with the concept of faith-based sustainability governance, which emphasizes the comparative advantage of religious institutions in mobilizing ecological values.

Previous studies, including Jenkins (2020) and Mubarok (2022), similarly demonstrate that theologically grounded leadership encourages ecological participation. Comparative analysis across universities reveals three leadership models:

- **Integrated Theological Leadership Model** (UIN Jakarta)
- **Theological–Community Model** (UIN Sunan Kalijaga)
- **Administrative–Technocratic Model** (UIN Sunan Ampel)

2. Community-Based Stakeholder Engagement

Quantitative analysis reveals a moderate relationship between institutional support and sustainability practices, with UIN Jakarta showing the highest scores and UIN Sunan Ampel the lowest.

However, qualitative findings suggest that effective institutional support is determined not solely by formal structures but by community-based stakeholder engagement. UIN Jakarta has developed strong partnerships with BAZNAS, local government institutions, Islamic philanthropic organizations, and mosque networks, strengthening the university's ecological social capital.

UIN Sunan Kalijaga demonstrates a community-driven model, where student groups, faculty initiatives, waste banks, and environmental communities serve as the primary drivers of ecological action, independent of centralized institutional policies.

Conversely, stakeholder engagement at UIN Sunan Ampel appears limited and unstructured, which explains the lower institutional support scores observed in the quantitative analysis.

The integration of findings indicates that the success of environmental programs is largely determined by religious social capital and community proximity, consistent with Social Capital Theory (Putnam, 2000) and the Community-Based Environmental Governance framework.

Previous studies by Hasanah (2021) and Nurhadi (2023) similarly demonstrate that religious communities play a crucial role in strengthening ecological behavior.

3. Resource Mobilization through Islamic Finance

Quantitative results show that institutional support contributes relatively modestly to sustainability practices, suggesting that formal funding mechanisms alone do not fully sustain environmental programs.

Qualitative findings expand this interpretation by demonstrating that Islamic financial mechanisms, such as zakat, green waqf, and community philanthropy, play a crucial role in mobilizing resources, particularly at UIN Jakarta.

UIN Sunan Kalijaga relies more heavily on research grants and faculty-led initiatives, while UIN Sunan Ampel faces budgetary limitations that constrain environmental programs.

This integration illustrates what mixed-methods scholars describe as expansion logic, whereby qualitative findings extend the interpretation of quantitative results by revealing additional explanatory factors not captured in survey instruments.

These findings align with Islamic Social Finance theory (Ascarya, 2021) and Resource Mobilization Theory, which emphasize the importance of leveraging informal and community-based resources for organizational development.

Previous research by Rahma (2022) and Al-Ansari (2020) also demonstrates that zakat and waqf can function as effective instruments for supporting sustainability initiatives.

4. Intrinsic Spiritual Motivation

Quantitative findings indicate that spiritual motivation correlates with environmental commitment, although it was not directly measured in the regression model.

Qualitative interviews reveal that spirituality is one of the most influential drivers of environmental participation among university members.

At UIN Jakarta, students perceive environmental activities as part of religious worship and moral responsibility, while at UIN Sunan Kalijaga spirituality manifests through ethical awareness and intellectual responsibility toward nature.

In contrast, spiritual motivation at UIN Sunan Ampel is less systematically institutionalized due to the absence of leadership explicitly linking religious values with environmental initiatives.

The integration of findings suggests that spiritual motivation functions as a latent construct influencing ecological behavior, which may not be fully captured through quantitative instruments but becomes evident through qualitative inquiry.

These findings reinforce Intrinsic Religious Motivation Theory (Allport & Ross, 1967) and the concept of eco-spirituality, as well as previous studies demonstrating that spirituality can strengthen pro-environmental behavior (Haryanto, 2021; Ridho, 2022).

Across institutions, spiritual motivation appears most effective when supported by theological leadership or strong religious communities.

Conclusion

The theoretical conclusion derived from the integration of findings suggests that sustainability in Islamic universities cannot be explained solely through structural or managerial approaches. Instead, it requires an ecotheological framework integrating leadership, community engagement, financial innovation, and spiritual motivation.

Theological leadership emerges as the most influential factor because it translates the principles of *tawhid*, *khalifah*, and *mizan* into institutional policies and organizational culture, consistent with Value-Based Leadership theory and faith-based governance frameworks.

At the same time, community-based stakeholder engagement functions as ecological social capital that strengthens policy implementation, aligning with Social Capital Theory and Community-Based Environmental Governance.

Resource mobilization through Islamic financial mechanisms, such as zakat, green waqf, and community philanthropy, demonstrates that value-based funding systems can sustain environmental initiatives when formal institutional support is limited, thereby extending Resource Mobilization Theory.

Furthermore, intrinsic spiritual motivation among university members serves as a key driver of ecological behavior, even when it is not explicitly captured in quantitative models, highlighting the relevance of Intrinsic Religious Motivation Theory and eco-spirituality.

Comparative analysis across institutions reveals three sustainability models:

1. Integrated Theological Leadership Model – UIN Jakarta
2. Community-Based Ecotheological Engagement Model – UIN Sunan Kalijaga
3. Technocratic Sustainability Model – UIN Sunan Ampel

These models demonstrate that sustainability in Islamic higher education is multi-layered, shaped by the interaction between theological values, community engagement, financial innovation, and spiritual depth.

Overall, this study extends the field of Islamic ecotheology in higher education by demonstrating that effective sustainability requires simultaneous integration of theological, managerial, social, and spiritual dimensions, addressing a gap in previous research that has rarely examined these dimensions collectively.

Future Research

Future studies should examine how spiritual motivation mechanisms, theological leadership, and Islamic financial innovation interact across different institutional types and cultural contexts.

More systematic cross-regional and interdisciplinary comparisons could provide valuable insights for policymakers and institutional leaders seeking to improve sustainability outcomes.

Longitudinal research would also help determine whether ecotheological integration produces long-term behavioral and organizational transformation, extending beyond immediate program outcomes.

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